

INTISARI

Pembangunan Bendungan Manikin yang berlokasi di desa Baumata Timur dan desa Bokong, Kecamatan Taebenu, Kabupaten Kupang Provinsi Nusa Tenggara Timur didesain menggunakan konstruksi terowongan berfungsi sebagai saluran pengambilan, saluran pengelak dan saluran pelimpah. Adapun pembangunan terowongan pelimpah utama dan pengelak sedang dalam tahap konstruksi diharapkan selesai di Juni 2024 untuk memenuhi kebutuhan air baku warga Kabupaten Kupang. Kegiatan magang dilakukan bertujuan untuk melakukan pengamatan kondisi geomorfologi, geologi permukaan dan bawah permukaan serta karakteristik geologi teknik berdasarkan pemetaan geologi, pemetaan geologi teknik, dan klasifikasi kualitas massa batuan dengan metode *Rock Mass Rating* (RMR), terutama pada trase terowongan pengelak – pelimpah utama. Hasil pengamatan kondisi geomorfologi menunjukkan satuan Dataran Aluvial Berlereng Landai, satuan Perbukitan Bancuh berlereng curam dan agak curam. Hasil pemetaan geologi permukaan ditemukan beberapa litologi yakni satuan Pasir-berangkal, satuan Packstone, satuan Napal dan satuan Batulempung bersisik dengan fragmen asing. Untuk hasil pemetaan geologi teknik permukaan terdapat kualitas massa batuan yang variatif yakni Baik (II), Sedang (III), Buruk (IV) hingga Sangat Buruk (V). Berdasarkan pemodelan numerik sistem penyangga menggunakan Phase2 didapatkan bahwa dari nilai *displacement* paling rendah adalah pemodelan sistem penyangga dengan Metode JSCE.

Kata kunci : Terowongan pelimpah utama dan pengelak, kualitas massa batuan, RMR, geomorfologi, litologi.

Summary

Abstract

The construction of Manikin Dam, which is located in East Baumata and Bokong villages, Taebenu District, Kupang Regency, East Nusa Tenggara Province, is designed using tunnel construction to function as a retrieval channel, dodging channel and spillway. The construction of the main spillway tunnel and dodger is under construction and is expected to be completed in June 2024 to meet the raw water needs of Kupang Regency residents. The internship activities were carried out to observe geomorphological conditions, surface and subsurface geology and engineering geological characteristics based on geological mapping, engineering geological mapping, and classification of rock mass quality using the Rock Mass Rating (RMR) method, especially in the main spillway - dodger tunnel trajectory. The observation of geomorphological conditions shows that the Alluvial Plain unit is gently sloping, the Bancuh Hills unit is steep and rather steep. The results of surface geological mapping found several lithologies namely Sand-shale unit, Packstone unit, Napal unit and Scaly Clay unit with foreign fragments. For the results of surface engineering geology mapping, there are varied rock mass qualities, namely Good (II), Moderate (III), Poor (IV) to Very Poor (V). Based on the numerical modeling of the buffer system using Phase2, it is found that the lowest displacement value is the modeling of the buffer system with the JSCE Method.

Keywords: The Main Spillway And The Diversion Tunnel, rock mass quality, RMR, geomorphology, lithology, scaly clay.